

Conflict of Interest Statement: None of the authors has a financial relationship with a commercial entity that has an interest in the subject of this manuscript.

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From the Authors:

We thank Drs. Guo, Williams, and Georas for their thoughtful comments on our pulmonary perspective (1). Their suggestion that future studies need to examine the mechanisms by which environmental exposures induce epigenetic modifications in specific lung cell types is important. Our understanding would be heightened even further by human research studies that examine cell-specific responses. Some additional studies further illustrate this point. For example, human alveolar macrophages, but not peripheral blood mononuclear cells derived from patients with mild and moderate asthma, showed reduced histone deacetylase (HDAC) activity compared with those derived from healthy controls (2). In addition, the gene expression of the human high-affinity receptor for leukotriene B4 receptor (BLT1) correlated with the degree of methylation at the promoter in a cell-specific manner (3).

While clearly challenging, human translational studies of the epigenetic responsiveness of key cell mediators in asthma pathogenesis would advance the field. Hopefully, our scientific community will be able to meet these challenges.

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What Can the NHANES Data Tell Us about the Tuberculin Skin Test and the Risk for Active Tuberculosis?

To the Editor:

We read with interest the article by Dr. Bennett and colleagues describing the prevalence of latent tuberculosis infection (LTBI) in the United States based on the NHANES 1999–2000 tuberculin skin-test (TST) data (1), and we wanted to examine the relationship between the population estimates for LTBI and the annual cases reported with active tuberculosis (TB). In 2000, active TB was reported in 8,714 United States-born persons and 7,554 foreign-born persons (2). Using the LTBI populations as the denominator, we calculated the case rates of active TB per 100,000 persons with LTBI stratified by age for both United States- and foreign-born populations (see Table 1). The annual incidence rate was 1.9-fold higher among the United States-born than foreign-born persons, and higher rates were observed for every age group except those 65 years and older, a strata with wide confidence intervals for the LTBI prevalence estimate. We hope the authors could address whether a twofold error in the LTBI prevalence as estimated by NHANES could account for these observations.

We recognize that not all TB cases in the United States arise from prevalent LTBI infection, but we believe that the small proportion of cases from recent infection or occurring in foreign-born persons who arrive with active TB is unlikely to account for the difference. One possible explanation is that the TST may be overestimating the LTBI prevalence in the foreign born, as suggested by studies using interferon- γ release assays (IGRAs) (3, 4). We would not suggest that these data mean that the United States-born population is at greater risk of TB than the foreign-born population or that the TST should not be used in the foreign-born. These observations do support the recognized need for a newer diagnostic test that better predicts who is at risk for active TB. IGRAs offer that potential (5), but until resources are available to conduct large prospective studies, the true accuracy of IGRAs remains unknown, thus delaying wide-scale implementation and potentially progress toward TB elimination.

TABLE 1. CASE RATE OF TUBERCULOSIS AMONG PERSONS WITH LATENT TUBERCULOSIS INFECTION IN THE UNITED STATES, 2000

Age Group (yr)	Active TB Cases (n)		Incidence Rate ($\times 10^5$)		Rate Ratio
	U.S.-born	Foreign-born	U.S.-born	Foreign-born	
1–14	704	254	407	62	6.6
15–24	470	1,143	244	156	1.6
25–44	2,504	3,047	303	93	3.3
45–64	2,809	1,822	170	87	2.0
≥ 65	2,226	1,287	173	301	0.6
Total	8,714*	7,554*	210	110	1.9

Definition of abbreviation: TB = tuberculosis.
* 1 U.S.-born and 1 foreign-born, age not stated.